

Status of the Universe “Legacy” Roadmap

Kathryn Flanagan
January 25, 2005

Roadmapping Efforts

“Bottoms up” roadmapping was formerly through SEUS & OS roadmaps. This year, it will be a single **“Universe” roadmap**. This is the **“Legacy” roadmap**, and will be an **input for two Strategic Roadmaps**. Co-chairs of Universe legacy roadmap are Adam Burrows and Kathryn Flanagan.

Strategic Roadmaps (SRM) are “top down” roadmaps.

SRM 8 “Universe Exploration” (Co-chairs are Anne Kinney, Nick White and Kathryn Flanagan)

SRM 4 “Search for Earth-like planets” (Co-chairs are Ghassem Asrar, Chas Beichman and Adam Burrows)

There will also be capabilities roadmaps. We will have presentations from CRM 12 “Scientific Instruments and Sensors” and CRM 4 “Advanced Telescopes and Observatories”

Universe Exploration Strategic Roadmap Committee

Committee Members

Anne Kinney, NASA Science Mission Directorate, *co-chair*

Nick White, Goddard Space Flight Center, *co-chair*

Kathy Flanagan, Massachusetts Institute of Technology, *co-chair*

Chuck Bennett, Goddard Space Flight Center

Craig Hogan, University of Washington

Steve Kahn, Stanford University, Stanford Linear Accelerator Center

Rene Ong, University of California, Los Angeles

Sterl Phinney, California Institute of Technology

Ron Polidan, Northrop Grumman Space Technology

Michael Shull, University of Colorado

Bob Stern, Lockheed Martin

Michael Turner, National Science Foundation

Jakob van Zyl, Jet Propulsion Laboratory

Michael Salamon, Mission Directorate Coordinator, *Designated Federal Official*

Rich Capps, Advanced Planning and Integration Office Coordinator (JPL)

Ex Officio and Liaison

Louis Barbier, Goddard Space Flight Center

Roy Gould, Harvard Center for Astrophysics, Education Roadmap Committee Liaison

Steve Maran, American Astronomical Society, community and media liaison

Staff

Gary Blackwood, Systems Engineer, Jet Propulsion Laboratory

Search for Earth-like Planets

Strategic Roadmap Committee

Committee Members

Ghassem Asrar, Science Mission Directorate, *co-chair*

Charles Beichman, Jet Propulsion Laboratory, *co-chair*

Adam Burrows, University of Arizona, *co-chair*

Jerry Chodil, Ball Aerospace (retired)

Tom Greene, Ames Research Center

Maureen Heath, Northrop Grumman Space Technology

John Mather, Goddard Space Flight Center

Victoria Meadows, Jet Propulsion Laboratory

Geoff Marcy, University of California

Frank Martin, Lockheed Martin (retired)

David Spergel, Princeton University

Neil Tyson, American Museum of Natural History

Alycia Weinberger, Observatories of the Carnegie Institution of Washington

Eric P. Smith, Mission Directorate Coordinator, *Designated Federal Official*

Rich Capps, Advanced Planning and Integration Office Coordinator (JPL)

Ex Officio and Liaison

Mike Devirian, Jet Propulsion Laboratory

Edna Devore, SETI, liaison to the Education Strategic Roadmap Committee

Anne Kinney, Science Mission Directorate

Staff

Gary Blackwood, Systems Engineer, Jet Propulsion Laboratory

Key community inputs to subcommittees and SRMs

To SRMS:

NASA APIO RFI GC-04-06

Nov 2, 2004

Request for white papers from community to SRMs and CRMs. Closed and white papers available.

To subcommittees:

SEUS/OS meeting with presentations by “Vision Missions” -

Nov 2004

Selected White Paper authors presented at special HEAD session
at AAS Jan 2005

Presentations by Origins Probes

Jan 2005

Additional white papers solicited for Universe Roadmap due in Feb

Outline of Universe Roadmap

Executive Summary

Overview

Beyond Einstein: Exploring the Extremes of Spacetime

The Origin and Evolution of Cosmic Structure

The Secret Lives of Stars

Planetary Systems and the Search for Habitable Worlds

Mission Summary

Enabling Technology

Sustaining the Roadmap

Education and Public Outreach

Appendix: Objective/RFS/Investigation

Back Material: Acronyms, glossary, sources of further
information, external factors, contributors

Universe Roadmap Team

Structure and Evolution of the Universe (SEU)

Kathryn Flanagan

Mike Cherry

Craig Hogan

Sam Finn

Jack Hughes

Jim Ulvestad

Jamie Bock

*Stephen Murray**

Nick White

Jean Swank

Hal Yorke

Joel Bregman

Lee Mundy

Roy Gould*

Sarah Church*

Dan Lester*

Rocky Kolb

Brenda Dingus

Ned Wright

Louis Barbier*

Tim Heckman

Tom Murphy*

Michael Salamon**

Origins (OS)

Adam Burrows

*Jim Breckinridge**

Vicki Meadows

*George Rieke**

*David Weinberg**

*Michael Devirian**

William Greene

*Eric Smith***

Chas Beichman

Sally Heap

Alycia Weinberger

Wes Traub

James Green

Mike Hauser

Michael Meyer

David Spergel

Steve Unwin

Harry Ferguson

Tom Greene

Andrew Blain

Geoff Blake

Mike Shara

*external roadmap member ** executive secretary

Status of Universe Roadmap

First draft is available. Does not include Vision Missions or Origins Probes. Revisions are due ~Feb 1, 2005.

SEUS/OS Sub-committees have not yet met and fully validated the draft. In particular, the inclusion and prioritization of “Vision Missions” and Origins Probes must be discussed. SEUS/OS expected to meet in March.

Universe Roadmap Presentations

Beyond Einstein:

Sam Finn

Origin and Evolution of Cosmic Structure:

David Weinberg (by telecon)

Secret Lives of Stars:

George Rieke

Enabling Technology:

Louis Barbier

As we listen to these presentations, we should keep in mind that as a committee, we will want to define objectives, prioritize them, and decide how to implement them (missions, R&D, etc.)